

Section 5.15

FINAL MEASUREMENTS

5.15.1 Purpose

To provide requirements and techniques to ensure Final Measured, Plan Quantity, and Lump Sum Pay Items are accurately and efficiently prepared and documented.

Measurements for bituminous material, earthwork, loose volume material in trucks, and Contractor certified quantities are addressed in other sections of **CPAM**.

5.15.2 Authority

Sections 20.23(3)(a) and 334.048(3), Florida Statutes (F.S.)

5.15.3 Reference

Standard Specifications for Road and Bridge Construction

Basis of Estimates Manual (BOE)

5.15.4 Final Measured Pay Items

On many items, quantities for progress and final estimates must be documented on **Field Records** per **CPAM 5.14** by recording measurements in the field as the work is constructed. This type of measurement is considered Final Measured. Monthly progress estimates are generated to reflect the work completed during each estimate period by summarizing the final measured quantities recorded. When the project is completed, the **Final As-Built Plans**, **Field Records**, and other Department approved forms are submitted, along with the other final estimate data, to substantiate the final quantities. Final measurement of pay quantities generally fall into one of the following categories:

- (A) **Area Measurement Pay Items:** When items are paid for by the area of the finished work, the dimensions for calculating these areas must be documented in the **Field Records**. This will be done in accordance with one of the following methods:
 - (1) The length will be the dimension shown on the plans or the station-to-station dimension actually constructed within the project limits designated by the Engineer. The width will be the dimension actually

constructed within the neat lines shown in the plans or designated by the Engineer/Project Administrator (PA) within the project limits.

- (2) The length and width will be measured in place, usually with length measured along the centerline of the construction work, and width measured at a right angle to the tangent of the centerline.
- (3) Stations and offsets must be recorded and used as latitudes and departures to calculate area. Curve corrections to account for a curved baseline must be applied to area calculations. When the baseline used for measuring areas is neither the project's centerline of construction nor a baseline for stationing shown in the plans, the baseline must be straight lined with beginning and ending points referenced to the centerline of construction by station and offset. The Final Measurements option of the FDOT Engineering Quantities Programs can be used to verify quantities.
- (4) Global Navigation Satellite System (GNSS) rovers can be utilized in lieu of traditional methods for area verification. Submit GNSS output, and reports to document area measurements. Ensure GNSS output includes accuracy and precision information.

NOTE 1: When changes to area measurement pay items are encountered in the field, the changes must be incorporated in the ***Final As-Built Plans***. Reference to the appropriate supporting documents must be made in the Plan Summary Boxes located within the Summary of Quantity Sheets in the Plans or, for contracts using an Estimated Quantities Report (EQR), on the ***Pay Item Summary and Certification*** form, per ***CPAM 5.13***.

NOTE 2: If computer programs are used, check the data input and calculations, and submit the site source measurements with the computer output.

NOTE 3: Pay item adjustments are added/subtracted as line item adjustments in PrC and are not included in the Pay Item Quantity on the estimate.

- (B) **Linear Measurement Pay Items:** The dimension documented for items paid for by linear feet will be the length shown on the plans and in the Plan Summary Box/EQR or the length measured along the finished surface of the item.

- (1) GNSS rovers can be utilized in lieu of traditional methods for linear verification. Submit GNSS output and reports to document linear measurement. Ensure GNSS output includes accuracy and precision information.
- (C) **Volumetric Measurements Pay Items:** Field quantities for items paid for by volume in cubic units, are usually determined by one of the following methods:
- (1) For final measure concrete pay items, the area and thickness installed per the Specifications are used to determine the final quantity.

NOTE 4: Per **Specifications 346**, concrete pay adjustments for low strength concrete are required when acceptance strength test results fall below the specified minimum strength. See [Attachment 5-15-1](#) for examples of pay adjustment calculations for low strength concrete.
 - (2) For Subsoil and Channel Excavation, cross-section notes (and sketches) are recorded along both the original surface and the surface of the completed work. The volumes are calculated by hand or by use of approved computer programs.
 - (3) Cross-sections with end area and volume computations can also be used advantageously in calculating buildup volumes of spalled concrete members.
 - (4) GNSS rovers can be utilized in lieu of traditional methods for volume verification. Submit GNSS output and reports to document volume measurement. Ensure GNSS output includes accuracy and precision information.
- (D) **Per Each Measurement Pay Items:** Items paid for as a unit (e.g., fence gates inlets, raised pavement markers (RPMs), etc.) will be tabulated by location in the **Field Record**. Verification of the work in the field will be documented through one of the following methods:
- (1) Document the verification of the work, location, stationing, element ID, etc. in the DWR per **CPAM 5.11.5**.
 - (2) Document in **Field Records** in accordance with **CPAM 5.14.4(B)** by entering data directly into the site source document/**Field Record**. All types of **Field Records**/site source documents utilized are to be in compliance with **CPAM 5.14.4(A)**. The date and complete name(s) of

the field party performing the measurements must be shown on the **Field Record**/site source document.

- (3) The EQR Excel and/or PDF file can be used in the field to record as-built quantities and data. Reflect the verification date and complete name(s) of the field party in the Remarks Column. Manually enter as-built information when it differs from the information originally provided in the EQR.
- (4) GNSS rovers can be utilized for per each items. Submit GNSS output and reports to document item locations. Ensure GNSS output includes accuracy and precision information.

5.15.4.1 Spalled Concrete

The Spalled Areas option of the FDOT Engineering Quantities Programs can be used to verify quantities. See [Attachment 5-15-2](#) for examples of spalled concrete sketches. For more information on concrete pavement criteria, see [Standard Plans Index 353-001](#). **Specifications Section 347** provides acceptance criteria for non-structural concrete. **Specifications 450** provides acceptance criteria for precast prestressed concrete.

5.15.4.2 Prestressed Concrete and Steel Piling

The final quantity for prestressed concrete and steel piling will be based on the length of piling furnished, driven, and accepted, including any adjustments authorized and approved by the Engineer. Refer to **Specifications Section 455-3** through **455-12** for more information.

Pile Logs are permanent records and must be submitted with the **Final Estimates Documentation** to completely and clearly support the final pay quantity.

Ensure there is no duplication of payment when cutoffs are transported to another bridge under the same contract for use as buildups or permanent piles. Also ensure there is no duplication of payment if the pile is extracted and driven elsewhere (the pile will be paid for at 50% of the contract unit price). See **CPAM 10.1** for further information.

5.15.4.3 Concrete Sheet Piling

The final quantity for Concrete Sheet Piling is the length of piling completed and accepted. Verify the pay quantity is based on the actual width of piling used, per **Specifications Section 455-11.7**. Ensure **Field Records** clearly document the top of pile and bottom of

pile elevations constructed in the field. Check for compliance with the plan elevations. See **CPAM 10.1** for more information.

NOTE: The final quantity to be paid for Concrete Sheet Piling on contracts let after June 1st, 2024 will be the plan quantity area, in square feet.

5.15.4.4 Drilled Shaft

The final quantity for Drilled Shafts is the length, in feet, completed and accepted as determined by **Specifications Section 455-23.1**.

Drilled Shaft Logs are permanent records and must be submitted with the **Final Estimates Documentation** to completely and clearly support the final pay quantity.

The Contractor is allowed to supply a Drilled Shaft casing with an inside diameter smaller than the specified Drilled Shaft diameter. In this case, the Contractor is required to provide an additional length of drilled shaft at no cost to the Department. The additional length required is determined by the following relationship. See **CPAM 10.5** for more information.

$$\text{Additional Length} = \frac{(D_1 - D_2)L}{D_2}$$

where:

D₁ = casing inside diameter specified = shaft diameter specified

D₂ = casing inside diameter provided (D₂ = D₁ minus twice the wall thickness)

L = authorized shaft length below ground for temporary casing methods or below casing for permanent casing methods.

5.15.5 Lump Sum Pay Items

Where the pay quantity for an item is designated to be a Lump Sum (LS) and the plans show an estimated plan quantity (secondary units), compensation for that item will be adjusted proportionately when a plan change results in a significant increase or decrease in the quantity from the estimated plan quantity (see **Specifications Section 9-3.2**). For these items, 1 LS will be paid on the pay item and overruns will be made as a line item adjustment, using adjustment type **LSAD -- LS Pay item Adj for Overruns**. The most common pay items eligible for this type of adjustment are Clearing and Grubbing (110-1) and Structural Steel (460-2). This adjustment method also applies to the proration of actual costs for the Partnering (999-16) and Electrical Power Service – Contribution in

Aid of Construction (639-8) pay items. See the example below and contact the State Final Estimates Office for more information.

NOTE 5: The MOT LS pay item 102-1 is NOT to be adjusted by construction for overruns/underruns using the secondary units of days.

When the plans do not provide secondary units, a new unit price may be established through a Supplemental Agreement (SA) to compensate the Contractor for changes in the cost of completing the item. Likewise, when it is apparent that miscellaneous items, such as maintenance of traffic or grading, have been included in the LS price for clearing and grubbing, any adjustment in the final LS price must be negotiated and documented by SA.

NOTE 6: For Lump Sum Projects, see **CPAM 6.2**.

5.15.5.1 Clearing and Grubbing

Example of adjustment to LS Clearing and Grubbing pay item:

Plan Quantity (PQ) = 1 LS (20 AC)
Change in Plan Quantity = 1.23 AC
LS Unit Price = \$13,290

Determine if the change in plan quantity meets **Specifications Section 9-3.2** criteria for Substantial Error using secondary units:

$$\text{Check 1 (exceeds 5\%): } \frac{1.23 \text{ AC}}{20 \text{ AC}} \times 100 = 6.15\% > 5\% \quad (\text{does qualify})$$

$$\text{Check 2 (exceeds \$5,000): } 1.23 \text{ AC} \times \frac{\$13,290}{20 \text{ AC}} = \$817.34 \quad (\text{does not qualify})$$

Since only one of the checks need to qualify to be considered a substantial error, a pay adjustment will be applied.

$$\begin{aligned} \text{Final Pay Quantity} &= \frac{\text{PQ (Secondary Units)} + \text{Change in PQ (Secondary Units)}}{\text{PQ (Secondary Units)}} \\ &= \frac{20 \text{ AC} + 1.23 \text{ AC}}{20 \text{ AC}} = \frac{21.23 \text{ AC}}{20 \text{ AC}} = 1.0615 \text{ LS} = 1.06 \text{ LS} \end{aligned}$$

The PA must verify the quantity change before any line item adjustment to the LS item is made. For this example, 1 LS will be paid on the pay item and 0.06 LS will be applied as a *LSAD -- LS Pay item Adj for Overruns* line item adjustment.

5.15.6 Plan Quantity Pay Items

Plan Quantity Items under **Specifications Section 9-3** are based on backup information and calculations by the Designer. The Plan Summary Boxes/EQR will show the Pay Item, Pay Item Description, Unit of Measure, Quantity, Location, and Stationing. Area ID numbers are also listed to reference corresponding area shapes within the Design files. Documentation and procedural requirements for plan quantity items are as follows:

- (A) Plan Quantity Items will not be final measured. Only changes in the field or plan errors that meet the 5% or \$10,000 (\$5,000 for contracts let before July 1st, 2025) criteria, as set forth in **Specifications Section 9-3**, are required to be documented as final measurements (see **CPAM 5.15.4**). The Construction Office will not make detailed calculation entries when no changes are made.
- (B) Should a dispute arise involving quantities for one or more of the plan quantity items, the Construction Office will request in writing, that the Designer provide detailed documentation or verify the concern for the plan quantity item(s) in question. The backup documentation must be produced within five (5) working days of the request from Construction per **BOE Chapter 8**.

- (C) Ensure changes to plan quantity items are documented and referenced per **CPAM 5.11, 5.12 and 5.13**.
- (D) Deviation from the Plan Dimensions: **Specifications Section 9-3.4** requires the aggregate change must exceed 5% or \$5,000 of the original plan quantity for earthwork and more than \$100 for other items.
- (E) When changes in limits are authorized, the PA must show the revised quantities by showing revisions alongside the original Designer's calculations. If an additional area is added, the PA should show the area within the **Final As-Built Plans** and reference the appropriate supporting documents. Additional plan sheets can be added to the **Final As-Built Plans**, if extra space is not available.

NOTE 7: Do not remove Designer quantity and/or work. Strike through and notate corrections appropriately.

- (F) Some method must be employed by the PA to prove or revise the Plan Quantity. Some of the suggested methods are as follows:
 - (1) Field measure
 - (2) Scale from plans
 - (3) Station-to-station calculations

- (G) Plan Quantity Items on multiple-financial projects under one contract (multi-FINs) are to be evaluated per contract total, not per project total. Evaluation for multi-FINs must employ a correction to the "contract total". See [Attachment 5-15-4](#) for examples of Plan Quantity analysis on multi-FINs.

NOTE 8: When two or more projects are on the same contract and the total combined change falls below the Plan Quantity parameters as outlined in **Specifications Section 9-3.2**, no change is made to the Plan Quantity.

- (H) The PA must make an analysis of the accuracy of plan quantity items. It is not the intent of the Plan Quantity concept to require laborious measurements, but rather to save man hours through less field survey work.

5.15.6.1 Type 'A' and Type 'B' Fencing

Type 'A' and Type 'B' Fencing are Plan Quantity pay items. The Payment for **Extra Length Posts** will require an invoice from the Contractor. Compensation will be at invoice

price plus 10%, per **Specifications Section 550-6.2**. The invoice will be submitted with the **Final Estimates Documentation**.

Example: Contractor submits an invoice for 20 extra length posts at an invoice price of \$250.00.

$$10\% \text{ of Invoice} = \$250.00 \times 10\% = \$25.00$$

$$\text{Invoice} + 10\% = \$250.00 + \$25.00 = \$275.00$$

A positive line item adjustment will be made to compensate the Contractor in the amount of \$275.00. It is recommended to reference the Construction **Electronic Document Management System (EDMS)** document number for the invoice in AASHTOWare Project Construction (PrC).

5.15.6.2 Steel Sheet Piling

The final quantity for Steel Sheet Piling is the plan quantity area, in square feet completed and accepted. Ensure **Field Records** clearly document the top of pile and bottom of pile elevations constructed in the field. Check for compliance with the plan elevations.

5.15.6.3 Concrete Structures

The final quantity for concrete is the plan quantity volume in cubic yards completed and accepted. Ensure deductions and allowances are made appropriately per **Specifications Section 400-22.2**.

NOTE 9: Transitional sections and end sections are included in plan quantity of traffic railing pay items. See **CPAM 10.2** and **CPAM 10.3** for more information.

5.15.6.4 Movable Bridges

Movable Bridges are project specific. See the **Technical Special Provision (TSP)** for method of measurement and basis of payment.

5.15.6.5 Timber Structures

The final quantity for Timber Structures is the plan quantity in feet, board-foot measure, forming part of the completed structure. Ensure the nominal commercial sizes shown in the plans or specified by the Engineer were used to calculate quantities. The lengths will be the overall lengths of the pieces as shown in the plans or the lengths incorporated in the structure if less than those shown in the plans. See **Specifications 470**.

5.15.6.6 Steel Grid Floors

The final quantity for Steel Grid Floors is the plan quantity area in square feet, completed and accepted. Station to station lengths and widths may be used in the calculation of the dimensions actually constructed within the limits designated by the Engineer for changes to the plan quantity. Determine that the proper deduction has been made for open joints in the floor as required to calculate plan quantity. See **Specifications Section 504** for more information.

5.15.6.7 Reinforcing Steel

The final quantity for Reinforcing Steel is the plan quantity, in pounds, incorporated into the completed work and accepted as determined by **Specifications Sections 415-7** and **415-8**.

5.15.6.8 Mowing and Litter Removal

The final quantity for mowing will be the project area multiplied by the number of completed mowing cycles. The individual areas of mowing completed will not be final measured. See **Specifications Section 107**. No field adjustments will be made to the project area.

This same concept applies to litter removal as well. Do not final measure or adjust the project area. Multiply the project area by the number of completed litter removal cycles to determine the final quantity. The number of litter removal cycles may differ from the number of mowing cycles, depending on the frequency directed by the Engineer per **Specifications 107-2.1**.

It is recommended to document the cycle dates in the Daily Work Reports and on field records, or **Form 700-050-61, Final Measurement Miscellaneous**.

5.15.7 Degree of Accuracy

Degree of Accuracy for recording pay item quantities will be as indicated in **BOE Chapter 2**.

5.15.8 Attachments

[Attachment 5-15-1](#) Examples of Pay Adjustments for Low Strength Concrete

[Attachment 5-15-2](#) Examples of Spalled Area Sketches

[Attachment 5-15-3](#) Example of Plan Quantity Analysis

[Attachment 5-15-4](#) Examples of Multi-FIN Plan Quantity Analysis

Attachment 5-15-1 EXAMPLES OF PAY ADJUSTMENTS FOR LOW STRENGTH CONCRETE

NOTE 10: The following pay adjustment examples are based on 28-day compressive strengths. Use the concrete compressive strength data at 56 days in lieu of the 28 days when the acceptance of concrete is at 56 days.

(A) Linear Foot Pay Item Example:

Given Information:

- Item #521-5-5, Concrete Traffic Railing (42" Vertical Shape)
- One pour today was 14 CY and covered 98.7 LF = 99 LF of railing
- Certified Invoice Price = \$575.00/LF
- Quantity of Concrete within the LOT = 14 CY
- 3 Cylinders were taken for the LOT. After 28 days, all cylinders failed.
- Required Strength of Class II Concrete = 3,400 Pounds per Square Inch (psi)
- Average Actual Cylinder Strength (after 28 days) = 2,850 psi

Payment Reduction per ***Specifications Section 346-11.3***

$$\begin{aligned}\text{Reduction in Percentage of Strength} &= \frac{\text{Specified Minimum Strength} - \text{Actual Strength}}{\text{Specified Minimum Strength}} \\ &= \frac{3,400 \text{ psi} - 2,850 \text{ psi}}{3,400 \text{ psi}} = \frac{550 \text{ psi}}{3,400 \text{ psi}} = 0.1618 = 16.18\%\end{aligned}$$

Multiply the certified invoice price by the reduction in percentage of strength by the quantity affected to determine the amount to deduct:

$$\text{Reduction in Pay} = \$575.00/\text{LF} \times 16.18\% \text{ (use all decimals)} \times 99 \text{ LF} = \$9,210.47$$

Apply the reduction as a negative line item adjustment of -\$9,210.47 with remarks of "Reduction in Pay is due to 16% Compressive Strength Failure".

(B) Cubic Yard Pay Item Example:

Given Information:

- Pay Item #400-4-2: Concrete Class IV Endwalls
- This LOT represents 3 failed cylinders and 25 CY.
- Certified Invoice Price = \$570.00/CY
- Pay Item is paid to the 10th of a CY
- Required Strength of Class IV Concrete = 5,500 psi
- Average Actual Cylinder Strength (after 28 days) = 5,000 psi

Payment Reduction per ***Specifications Section 346-11.3***:

$$\text{Reduction in Percentage of Strength} = \frac{\text{Specified Minimum Strength} - \text{Actual Strength}}{\text{Specified Minimum Strength}}$$

$$= \frac{5,500 \text{ psi} - 5,000 \text{ psi}}{5,500 \text{ psi}} = \frac{500 \text{ psi}}{5,500 \text{ psi}} = 0.0909 = 9.09\%$$

Multiply the certified invoice price by the reduction in percentage of strength by the quantity affected to determine the amount to deduct:

$$\text{Reduction in Pay} = \$570.00/\text{CY} \times 9.09\% \text{ (use all decimals)} \times 25 \text{ CY} = \$1,295.33$$

Apply the reduction as a negative line item adjustment of -\$1,295.33 with remarks of "Reduction in Pay is due to 9% Compressive Strength Failure".

(C) Cubic Yard Pay Item Example (Plastic Properties Pay Reduction)

Given Information:

- Pay Item #400-2-11: Class II Concrete, Retaining Wall
- Contract Plan Quantity = 7 CY
- Certified Invoice Price of Concrete = \$150.00/CY
- 8 CY was delivered in a single ready-mix truck
- Rejected load due to a failed plastic properties test - placement continued

Payment Reduction per **Specifications Section 346-12**:

Pay Reduction (cast-in-place) =

$2 \times (\text{Certified Invoice Price per CY}) \times (\text{Concrete Quantity in Rejected Load})$

$$= 2 \times (\$150.00/\text{CY}) \times (8 \text{ CY}) = \$2400$$

Apply the reduction as a negative line item adjustment of -\$2400 with remarks of "Reduction in Pay is due to Plastic Properties Failure".

NOTE 11: For placing a rejected load of concrete in a precast product, plastic pay reductions will be two times the certified invoice price of the precast product multiplied by a reduction factor (% of concrete in the precast product).

(D) Each Pay Item Example (with Partial Payment):

Given Information:

- Pay Item #425-1-351: Inlets, Curb, Type P-5, <10'
- Contract Plan Quantity = 7 EA
- Certified Invoice Price = \$3,300.00/EA
- Partial Pay: 65% paid for bottom and 35% for top
- 18 CY was placed for 7 inlet tops
- Required Strength of Class II Concrete = 3,400 psi
- Average Actual Cylinder Strength (after 28 days) = 3,275 psi

Payment Reduction per **Specifications Section 346-11.3**:

$$\text{Reduction in Percentage of Strength} = \frac{\text{Specified Minimum Strength} - \text{Actual Strength}}{\text{Specified Minimum Strength}}$$

$$= \frac{3,400 \text{ psi} - 3,275 \text{ psi}}{3,400 \text{ psi}} = \frac{125 \text{ psi}}{3,400 \text{ psi}} = 0.0368 = 3.68\%$$

$$\begin{aligned} \text{Equivalent quantity effected due to partial pay} &= \text{Quantity affected} \times \text{partial pay percentage} \\ &= 7 \text{ EA} \times 35\% = 2.45 \text{ EA} \end{aligned}$$

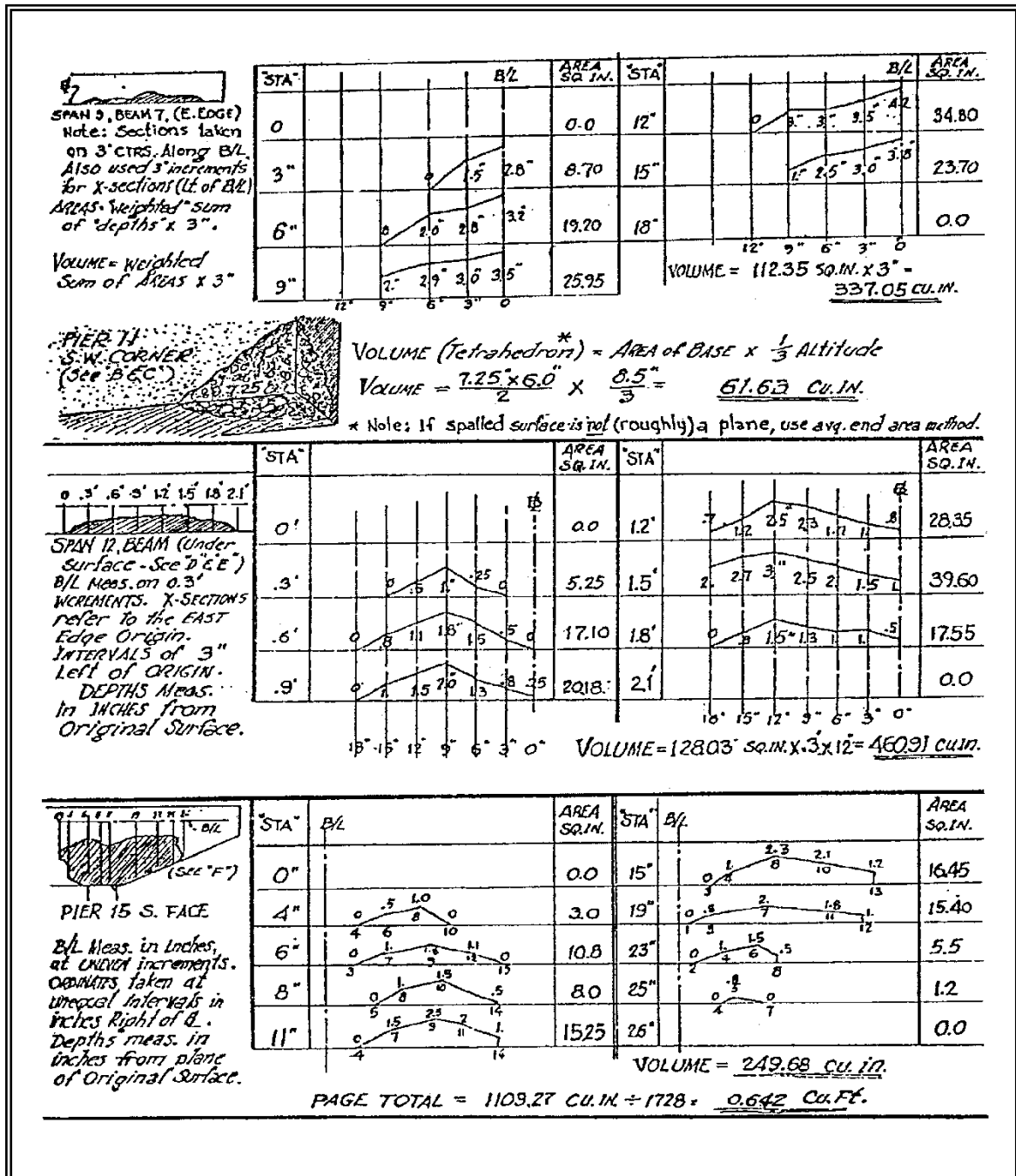
Multiply the certified invoice price by the reduction in percentage of strength by the equivalent quantity affected to determine the amount to deduct:

$$\text{Reduction in Pay} = \$3,300.00/\text{EA} \times 3.68\% \text{ (use all decimals)} \times 2.45 \text{ EA} = \$297.53$$

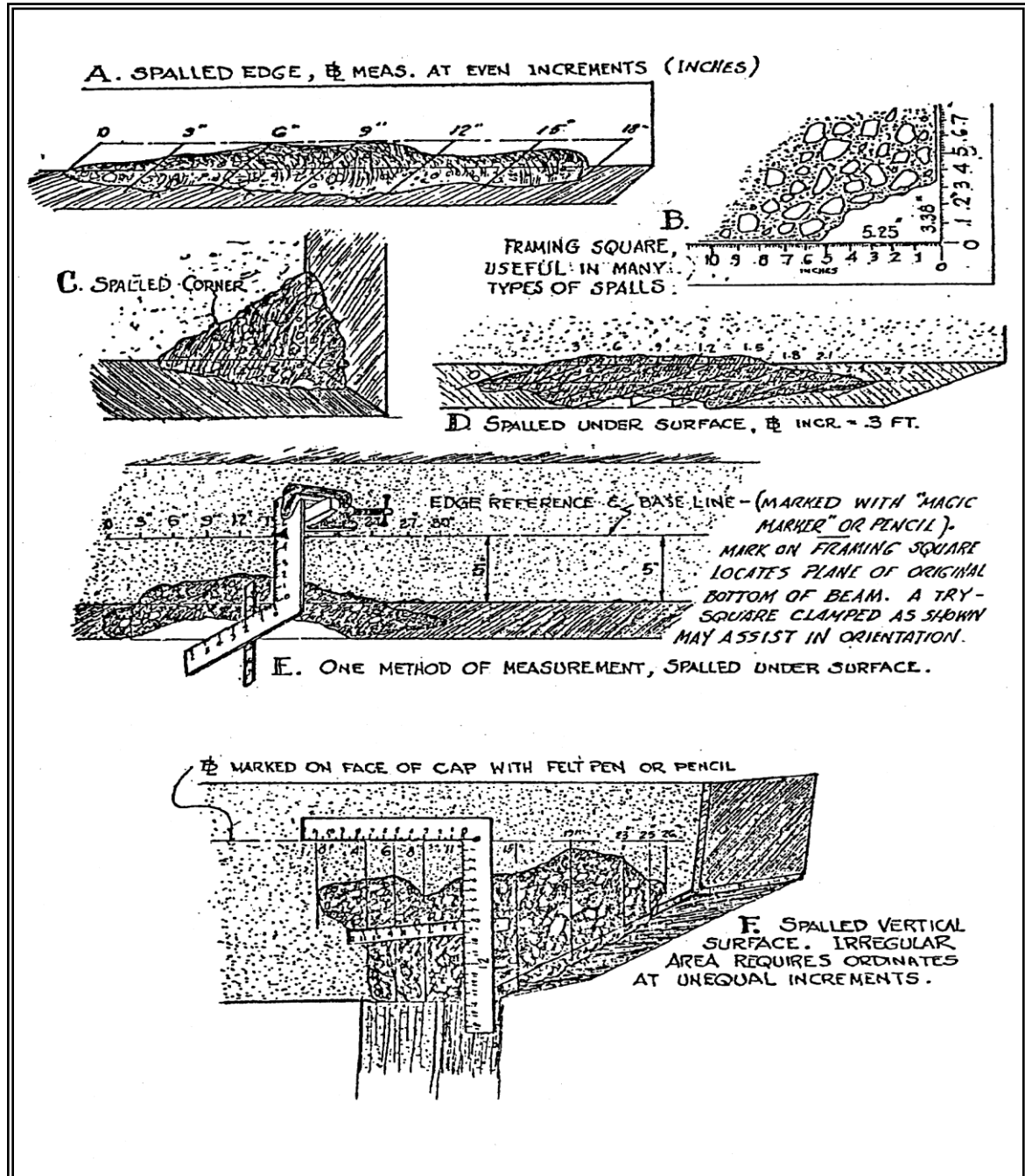
Apply the reduction as a negative line item adjustment of -\$297.53 with remarks of "Reduction in Pay is due to 4% Compressive Strength Failure".

Attachment 5-15-2 SPALLED AREAS SKETCHES

(A) Spalled Area Example 1



(B) Spalled Area Example 2



Attachment 5-15-3 PLAN QUANTITY ANALYSIS

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
FINAL MEASUREMENTS "MISCELLANEOUS"

700-050-61
CONSTRUCTION
12/07
Page No. 1 of 1

Date: 12/29/2015

Pay item #: 520-17 CONCRETE CURB AND GUTTER, TYPE E

Plan ERROR; STA.436+36.88 SHOULD HAVE BEEN 436+26.88

Gross Length PQ from STA 436+36.88 to 436+77.27 =131.7 LF

Plan Error from STA 436+26.88 to 436+77.27 = 141.7 LF

Added additional of 10 LF

Unit Price = \$ 14.00 per LF

Total PQ = 963 LF

Plan Quantity Analysis:

10 LF X \$ 14.00 = \$ 140.00 < \$ 5,000

$(10 \div 963) 100 = 1.03\% < 5\%$ both scenarios do not qualify to change PQ.

Therefore Pay PQ of 963 LF

65453

Attachment 5-15-4 MULTI-FIN PLAN QUANTITY ANALYSIS

(A) Plan Quantity Does Not Change

Given Information:

- Pay Item #160-4: Type B Stabilization
- Contract Plan Quantity = 70,000 SY
- Unit price = \$1.00/SY

Plan Quantity Analysis		
Contract T1234	Original Plan Quantity	Plan Errors
Project 1 of 2	50,000 SY	(-) 8,000 SY
Project 2 of 2	<u>20,000 SY</u>	<u>(+) 10,000 SY</u>
	70,000 SY	(+) 2,000 SY

What is the Final Pay Quantity for each job?

Step 1: Determine if the error exceeds 5%:

$$\frac{\text{Total Contract Plan Error}}{\text{Contract Plan Quantity}} = \left(\frac{2,000 \text{ SY}}{70,000 \text{ SY}} \right) \times 100 = 2.9\% < 5\%$$

Step 2: Determine if the error exceeds \$10,000:

$$\begin{aligned} &\text{Total Contract Plan Error} \times \text{Unit Price} \\ &= 2,000 \text{ SY} \times \$ 1.00/\text{SY} = \$2,000.00 < \$ 10,000.00 \end{aligned}$$

Both calculations in Step 1 and Step 2 do not qualify to change the original plan quantity for the contract; therefore, plan quantity for both projects will be paid due to final adjustment being less than 5% and less than \$10,000.00.

Final Type B Stabilization Quantity for Project 1 of 2 = 50,000 SY

Final Type B Stabilization Quantity for Project 2 of 2 = 20,000 SY

(B) Plan Quantity Does Change

Given Information:

- Pay Item #160-4: Type B Stabilization
- Contract Plan Quantity = 70,000 SY
- Unit Price = \$1.00/SY

Plan Quantity Analysis			
Contract T4321	Original Plan Quantity	Plan Errors	Field Changes
Project 1 of 2	50,000 SY	- 3,000 SY	- 320 SY
Project 2 of 2	20,000 SY	+ 8,000 SY	- 400 SY
	70,000 SY	+ 5,000 SY	- 720 SY

What is the Final Pay Quantity for each job?

Step 1: Determine if the error exceeds 5%:

$$\frac{\text{Total Contract Plan Error}}{\text{Contract Plan Quantity}} = \left(\frac{5,000 \text{ SY}}{70,000 \text{ SY}} \right) \times 100 = 7.1\% > 5\%$$

Step 2: Determine if the error exceeds \$10,000:

$$\begin{aligned} &\text{Total Contract Plan Error} \times \text{Unit Price} \\ &= 5,000 \text{ SY} \times \$1.00/\text{SY} = \$5,000 < \$10,000 \end{aligned}$$

Only one of the criteria above must be met for plan errors to qualify for additional payment. Although the error did not exceed \$10,000, it did exceed 5% and qualifies for additional payment.

NOTE 12: All Field Changes will be added or subtracted under each job for final pay regardless of plan errors.

Project 1 of 2:

Original Plan Quantity = 50,000 SY
Plan Error = -3,000 SY
Field Change = -320 SY
Final Quantity = 46,680 SY

Project 2 of 2:

Original Plan Quantity = 20,000 SY
Plan Error = +8,000 SY
Field Change = -400 SY
Final Quantity = 27,600 SY